

REMARKS

Claims 1, 2, 4, 9, 11, 14-18, 20, 23 and 25-27 have been amended. Claim 29 has been added. Claims 2, 13, 19 and 22 have been canceled. Claims 1 and 3-12, 14-18, 20, 21 and 23-29 are pending.

Drawings

The drawings have been amended as described above.

In particular, Figure 1 has been amended to clarify that Networks 28a-28n represent sub-networks of a network 28. The home agent may be interconnected with one or more of these sub-nets. The interconnectivity is characterized in the specification at page 3, lines 20-25. No new matter has been added.

Specification

The paragraph beginning at page 2, line 16 has been amended to clarify the interconnection of the sub-networks 28a, 28n. The interconnectivity is described more clearly in the specification at page 3, lines 22-25. No new matter has been added.

Other typographical and clerical errors have been corrected.

The specification was objected to as allegedly failing to provide proper antecedent basis for the subject matter of claims 23 and 24. The Applicants respectfully disagree.

The system assigns the mobile-device an initial-real-address while the mobile-device is in a first location covered by a first cell tower. Page 15, lines 7-11 and FIG. 11B. As the mobile-device moves from the first location to a second location covered by a second cell tower, the mobile-device detects the change in location. Once a change in location is detected, the mobile-device requests a new real-address from the DHCP server. The DHCP server assigns a new real-address to the mobile-device. Page 16, lines 2-8 and FIG. 11C.

The Applicants submit that the initial real-address and the new real-address provide the antecedent basis for the first real-address and the second real-address recited in claims 23 and 24.

The Applicants respectfully request withdrawal of the objection to claims 23 and 24 for lack of antecedent basis.

Claim Objections

Claims 1, 2, 4, 9, 11, 14-18, 23 and 25-27 have been amended to use consistent terminology as recommended by the Examiner.

Claim 3 has been amended to recite, "maintaining the communication path to the mobile-device . . ." The Applicants submit that this amendment addresses the objection raised by the Examiner regarding claim 3.

Claim Rejections – 35 U.S.C. 102

Claims 1-8 and 23 were rejected as anticipated by U.S. Pat. No. 6,510,153 to Inoue et al. Claims 9-22 and 25-28 were rejected as anticipated by Internet Engineering Task Force (IETF), RFC 2344, Reverse Tunneling for Mobile IP.

Claim 1 has been amended to incorporate the features of claim 2. Claim 23 has been amended to add a similar feature. In particular, claim 1 recites, "using respective program layers below transmission control protocol/internet protocol (TCP/IP) program layers in the mobile-device and the home-agent to establish the communication path and maintain the communication path." Claim 23 recites a similar feature.

The remaining independent claims have been amended as follows:

Claim 9 has been amended to incorporate the features of claim 13. Claim 9 recites, "using a program layer below a transmission control protocol/internet protocol (TCP/IP) program layer in the mobile-device to generate the request, encapsulate the request-layer and communicate the encapsulated request-layer."

Claims 15, 18, 23 and 25 have been amended to recite, "use respective program layers below transmission control protocol/internet protocol (TCP/IP) program layers in the mobile-

device and the home-agent to establish a communication path and maintain a communication path between the home-agent and the mobile-device.”

Claim 20 has been amended to recite, “the processor uses respective program layers below transmission control protocol/internet protocol (TCP/IP) program layers.”

The Inoue and IETC references disclose mobile IP communication schemes. Regarding the Inoue reference, when the mobile-computer is away from the home-network, the mobile-computer sends a registration message indicating the current location to the home-agent. The home-agent then carries out the data routing control with respect to the mobile computer by encapsulating an IP packet destined to the original address of the mobile-computer to the current address of the mobile-computer. Col. 1, lines 56-63. The home-network 1a is provided with a home agent (HA) 5 for managing information on a current location at the visited site of the mobile-computer in order to support the Mobile IP. A transferred IP packet destined to the mobile computer 2 is captured by the home-agent 5 at the home network, where the routing control for data is realized by encapsulating an IP packet destined to an original address of the mobile computer 2 within a packet in the Mobile IP format which is destined to the current location address. Col. 6, lines 1-13. As shown in FIG. 7, the mobile-computer 2 that has moved and re-connected to the visited site network is in a state where the TCP/IP module 21 has acquired the new address of the mobile device. Col. 18, lines 51-58. Thus, the Inoue communication scheme routs data through a home-agent to a mobile-computer that changes network addresses using a TCP/IP protocol.

In contrast, claims 1 and 23 recite that the communication path between the mobile-device and the home-agent is maintained using a protocol that is below TCP/IP program layers. As explained in a particular example in the pending specification, the mobility-driver 48, which resides below the TCP/IP stack 46, is responsible for enabling the mobile-device 20a to move seamlessly between different locations. A proxy-driver 62 resides at a logically lower level than the TCP/IP layer 61 and is responsible for maintaining uninterrupted communication between the mobile-devices 20a, 20n and a particular server 26a, 26n. The proxy-driver 62 manages the data-

requests, in the form of data-packets, generated by a mobile-device 20a, 20n and directed to a server 26a, 26n. It also manages the corresponding data-response from the server 26a, 26n in the form of data-packets. A network-driver 66 is responsible for controlling the network interface card (NIC) 68 and enabling the exchange of data-packets over the network 28a, 28n. Page 7, line 15 to page 8, line 2.

A user datagram protocol (UDP) layer 50 provides an additional standard communications protocol that can be used in conjunction with the mobility-driver 48 to further process data to be exchanged over the network 28a, 28n. Page 16, line 4. The claimed technique can be implemented in a software layer that resides below the more complicated TCP/IP stack. Thus, there is no need to modify the TCP/IP stack, which may provide a simpler solution for a mobile-device to maintain substantially uninterrupted communication while moving between locations with different subnet addresses. Page 16, line 15-22.

By using a protocol later below the TCP/IP protocol layers, the present application has the advantage that the device may include a TCP/IP stack or other protocol based on the network open systems interconnections (OSI) communication model. Other protocol layers may include AppleTalk TM which implements a datagram delivery protocol corresponding closely to the network layer of the OSI communication model. Page 5, line 17 to page 6, line 2.

Thus, the Inoue reference does not anticipate claims 1 and 23 because that reference does not disclose each and every limitation recited in those claims. Nor is there any suggestion of the claimed subject matter. The Applicants respectfully request withdrawal of the 35 U.S.C. 102 rejections.

The IETC reference discloses Mobile IP that uses tunneling from the mobile node's care-of address to the home-agent. The reference proposes backwards-compatible extensions to Mobile IP in order to support topologically correct reverse tunnels. The reference discloses techniques for a mobile node to handle registrations that request a reverse tunnel. An encapsulating scheme shows the format of the packet headers used by a Direct Delivery style. The formats assume IP in IP encapsulation. There is no disclosure or suggestion that the IETC

reference uses a protocol that is below the TCP/IP layers. Therefore, for reasons similar to these discussed above, independent claims 9, 15, 18, 23 and 25 should be allowable as well.

Dependent Claim

The dependent claims recite additional limitations and should be allowable for at least the same reasons as discussed above w/r/t the independent claims..

For example, new dependent claim 29 recites that protocol other than TCP/IP is also enabled to establish the communication path and maintain the communication path.

Conclusion

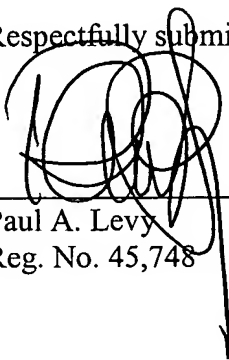
Applicant submits that all pending claims are in conditions for allowance.

Enclosed is a \$110.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Date: 4/16/04

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Respectfully submitted,



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